

Patent Claims

1. A lightweight valve (1), in particular for internal combustion engines, with a valve stem (3), with a hollow valve cone (5) and with a valve disk (7) closing the valve cone hollow space on one side, valve cone-supporting means being provided in the hollow space, characterized in that the valve cone-supporting means are provided at a distance from the valve disk (7).
2. The lightweight valve as claimed in claim 1, characterized in that the valve cone-supporting means are designed in one piece with the valve stem (3).
3. The lightweight valve as claimed in claim 1 or 2, characterized in that the valve cone-supporting means are designed on a stem connection element (17) which is formed on or fastened to the valve disk (7) and projects in a dome-like manner above the flat side facing the valve cone (5).
4. The lightweight valve as claimed in one of claims 1 to 3, characterized in that the valve cone-supporting means comprise at least one supporting surface (21), and an inner wall region (23) of the valve cone (5) between which there is at least bearing contact.
5. The lightweight valve as claimed in claim 4, characterized in that the contour of the supporting surface (21) is designed to complement the valve cone inner wall region (23).
6. The lightweight valve as claimed in one of claims 1 to 5, characterized in that the valve cone-supporting means are formed by a thickening (19) on the valve stem (3), or on the stem connection element (17).
7. The lightweight valve as claimed in one of claims 1 to 6, characterized in that the valve cone (5) is of disk-spring-shaped design.
8. The lightweight valve as claimed in one of claims 1 to 6, characterized in that the valve cone (5) has at its end of smaller diameter a tubular projection for guiding the valve stem (3) or the stem connection element (17) designed on the valve disk (7) through.

9. The lightweight valve as claimed in one of claims 1 to 8, characterized in that the valve cone-supporting means form a centering and/or supporting seat for the valve cone (5).
10. The lightweight valve as claimed in one of claims 1 to 9, characterized in that a recess (9) serving as a centering and/or supporting seat for the valve cone (5) is provided in the valve disk (7).